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 A61F 5/445

(52) UK CL (Edition L)  
 A5R RCE

(56) Documents cited  
 GB 2228416 A

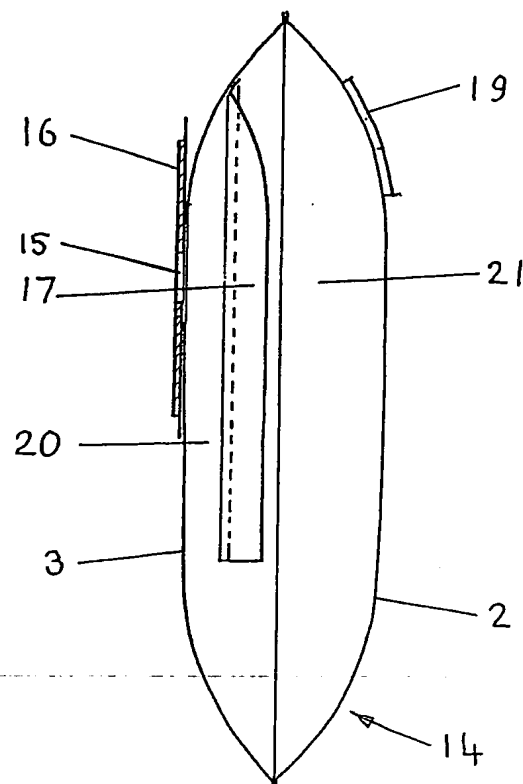
(58) Field of search  
 UK CL (Edition K) A5R RCE  
 INT CL<sup>5</sup> A61F 5/441 5/445  
 Online databases: WPI

(54) Ostomy bag with internal dividing means

(57) An ostomy bag 14 comprises an internal partition wall 17 or an internal open-bottomed pouch or tube (117, Fig. 4) for dividing at least a portion of the interior of the bag into a first section 20 communicating with an inlet aperture 15 through which body wastes may in use enter the bag, and a second section 21 communicating with an outlet aperture 19 through which waste gasses may in use be dispersed to the environment, said sections 20, 21 of the bag being in communication with each other in a zone remote from the inlet and outlet apertures, and the maximum permitted cross-sectional area of the first section being less than that of the bag as a whole.

The invention permits waste gasses to pass through the bag, to be vented to the environment through the outlet aperture 19, with reduced risk of obstruction.

FIG 2



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FIG 1

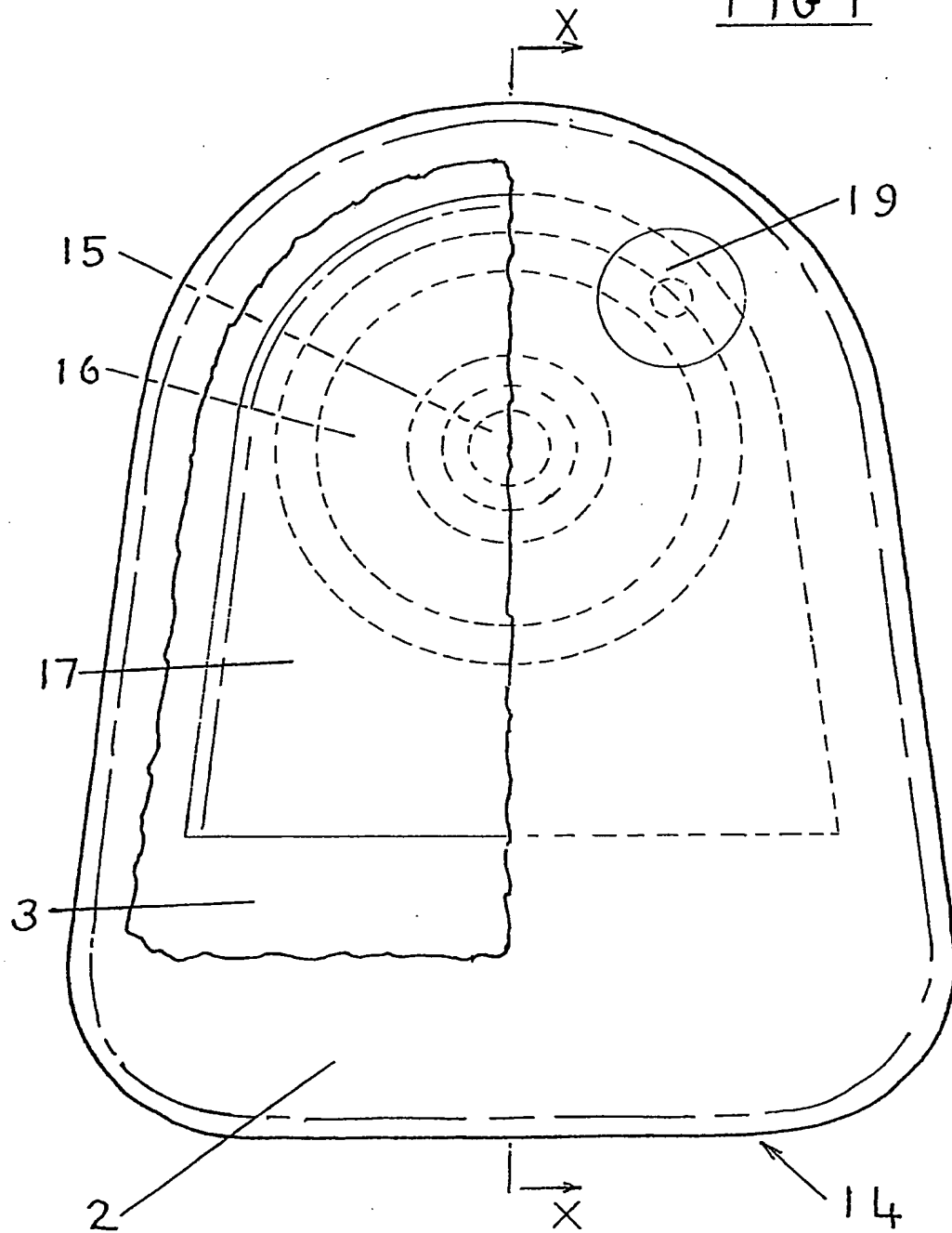
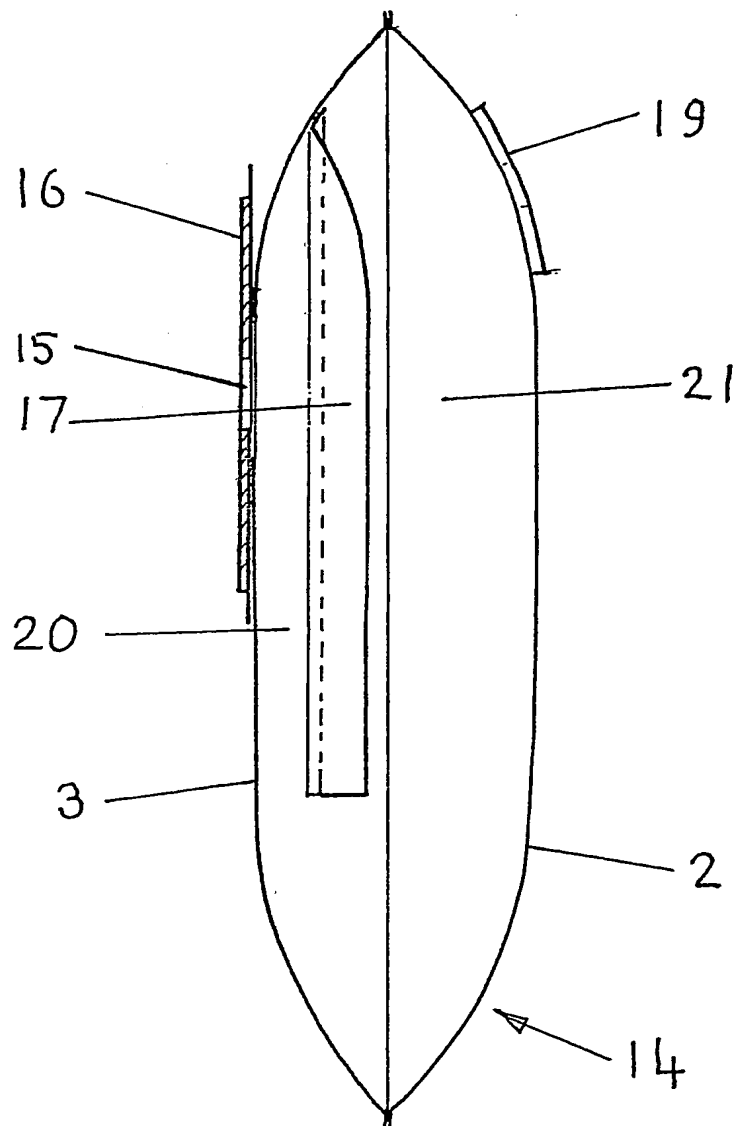
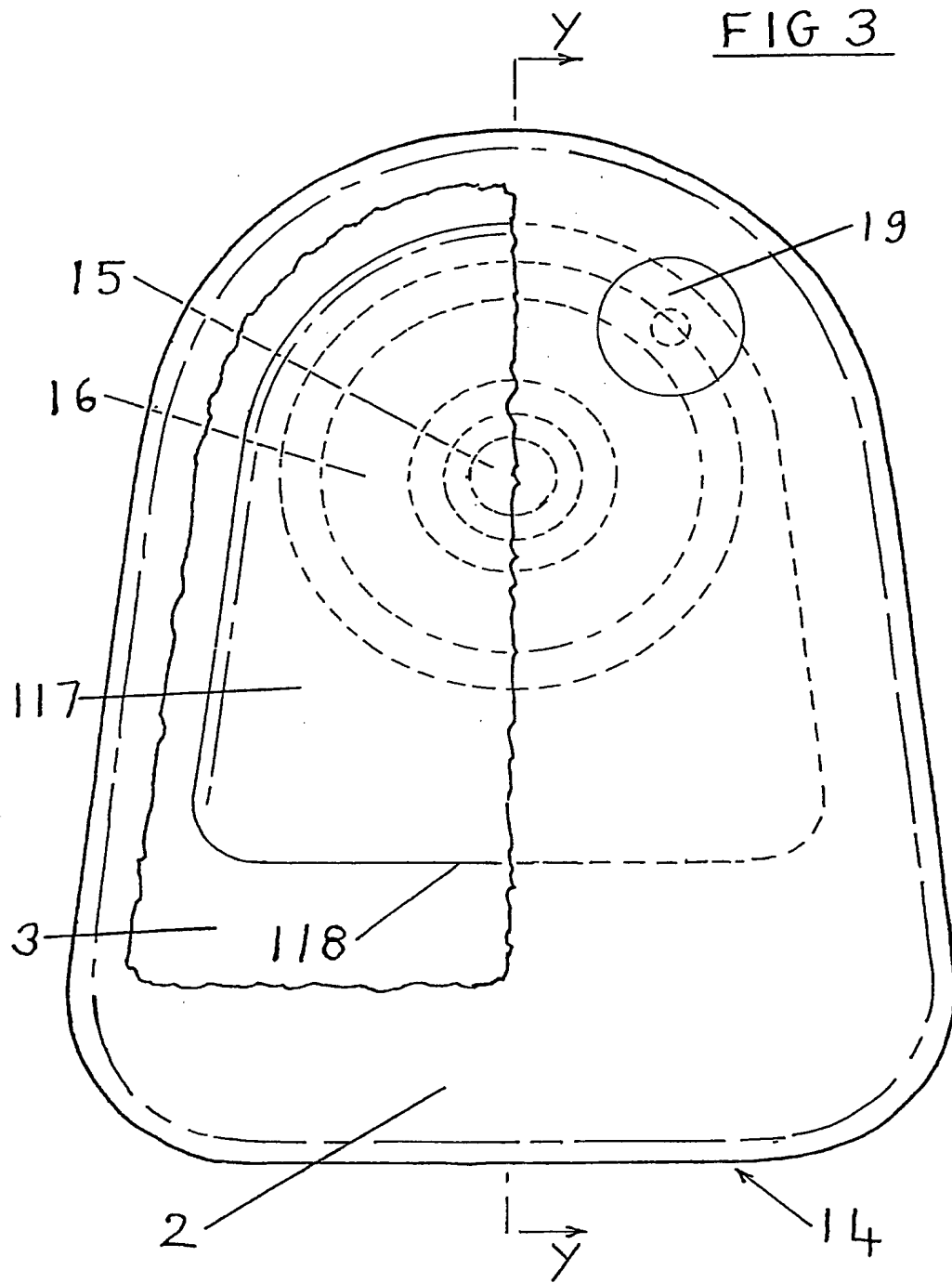


FIG 2



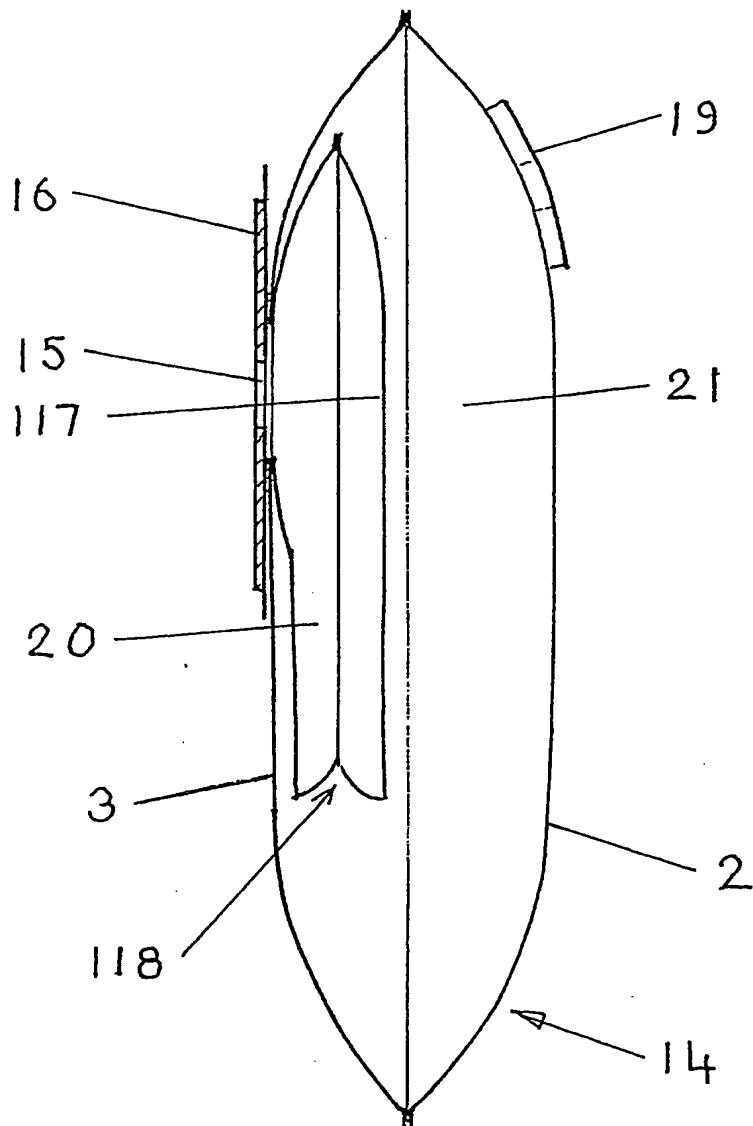
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FIG 3



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FIG 4



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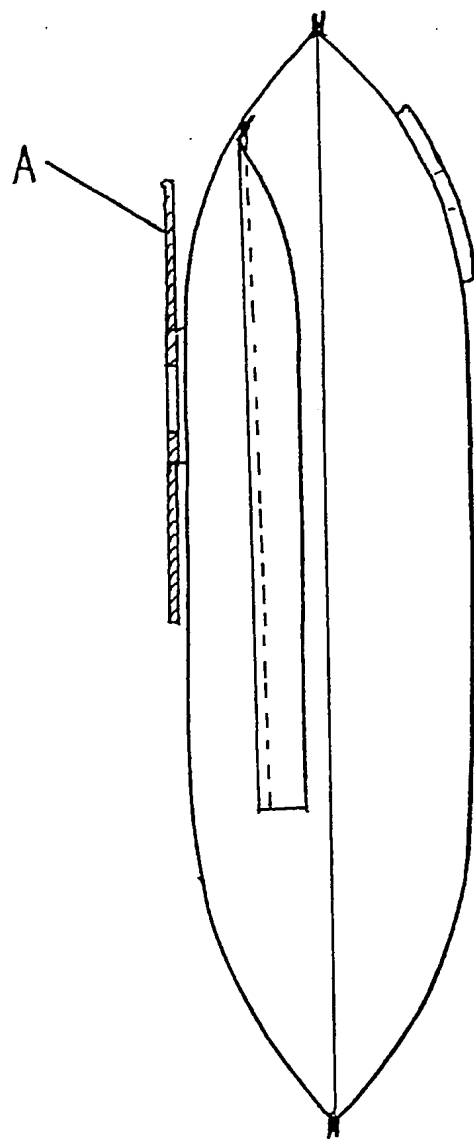


FIG. 5

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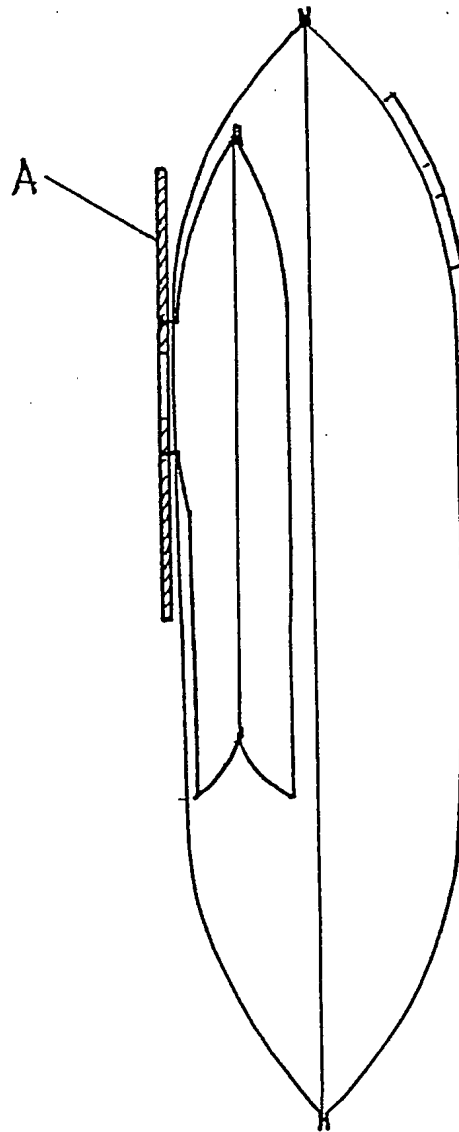


FIG. 6

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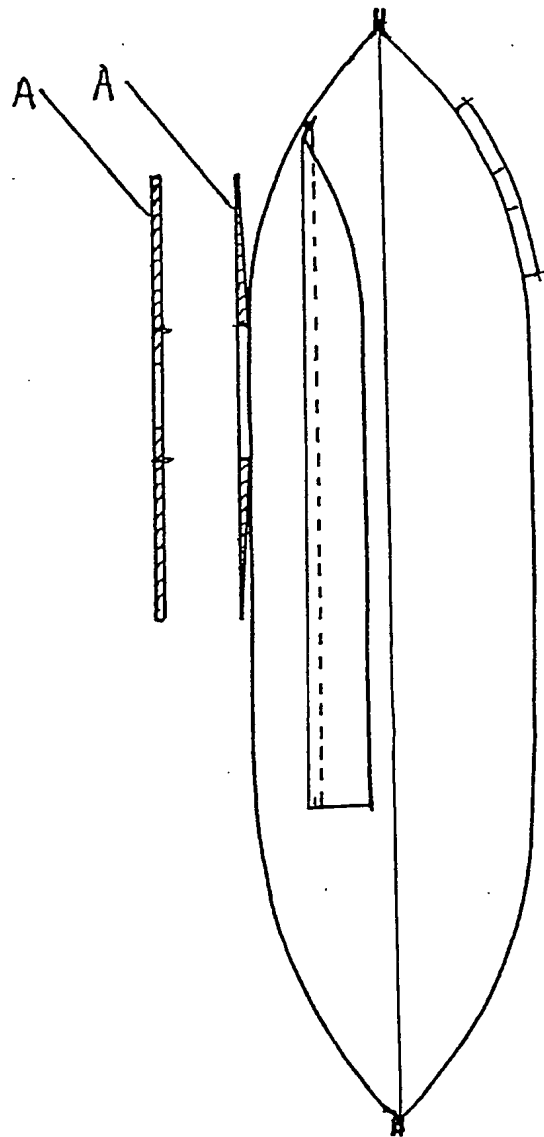


FIG. 7



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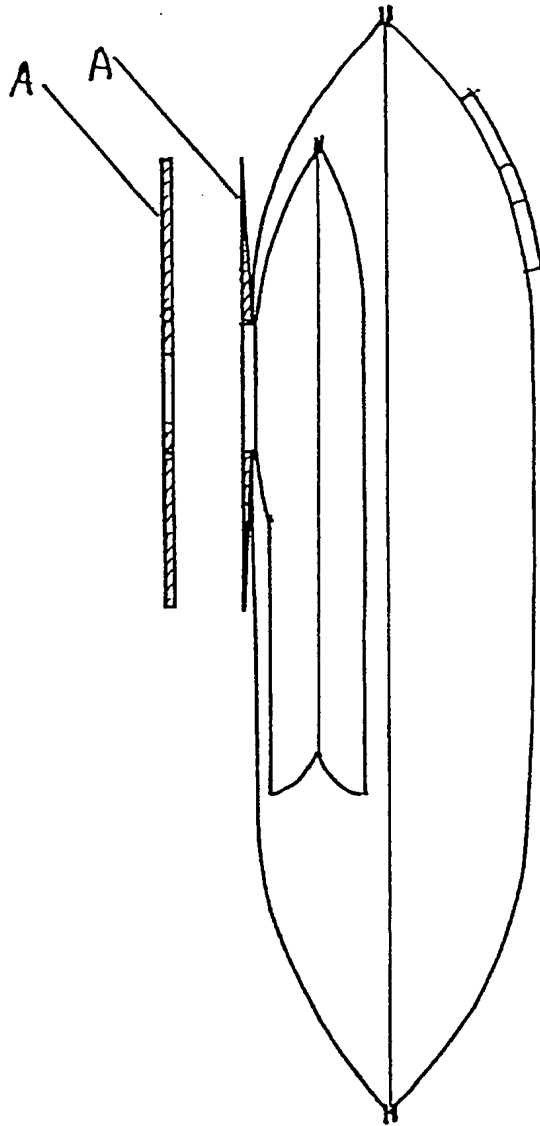


FIG 8

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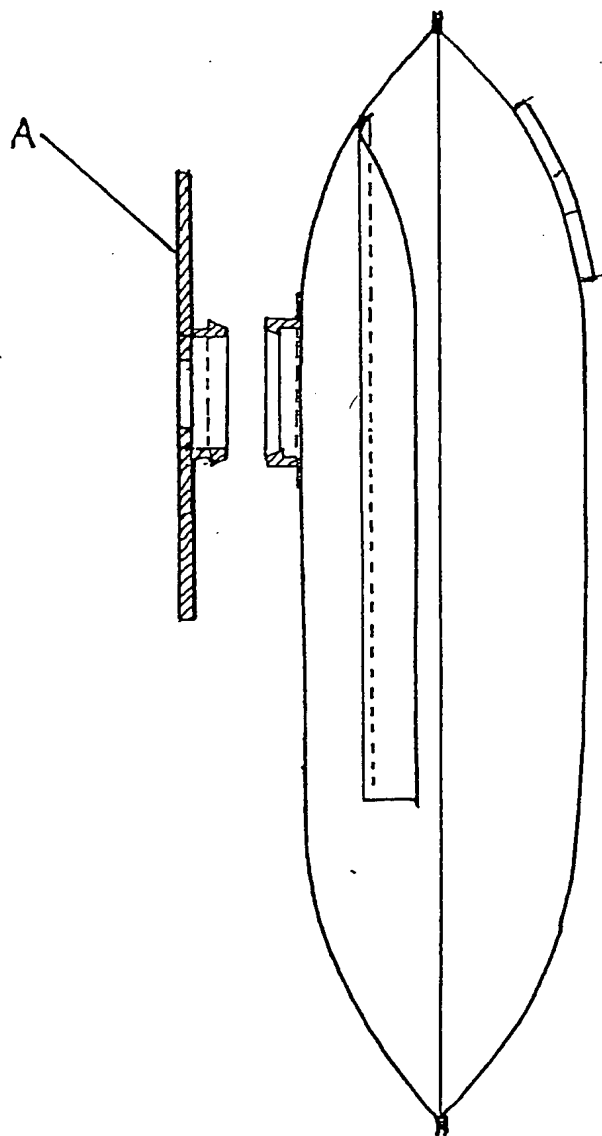


FIG 9

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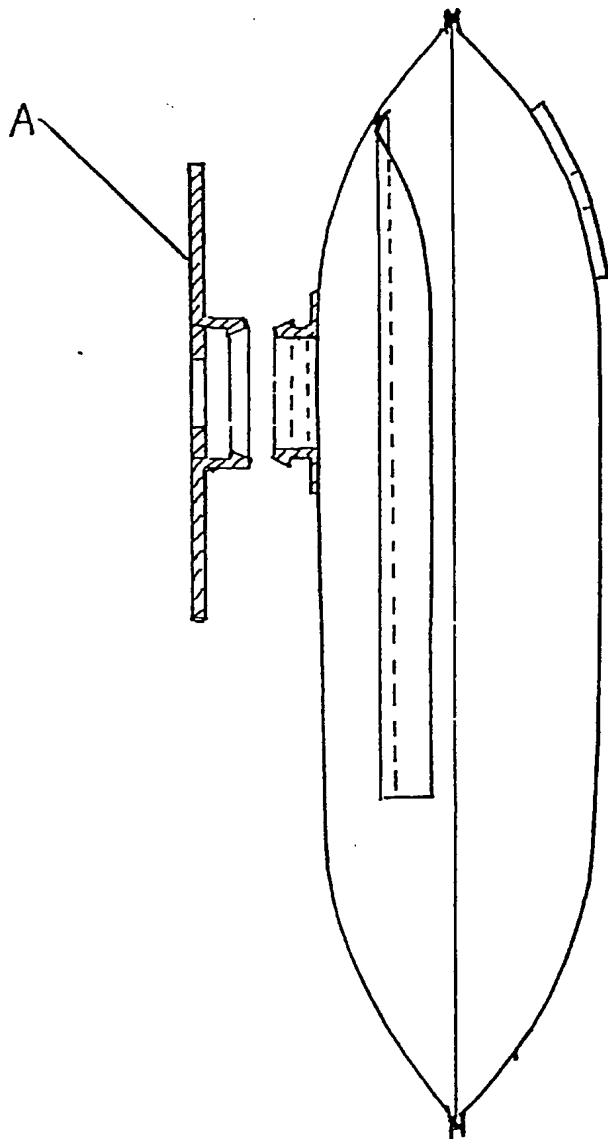


FIG 10

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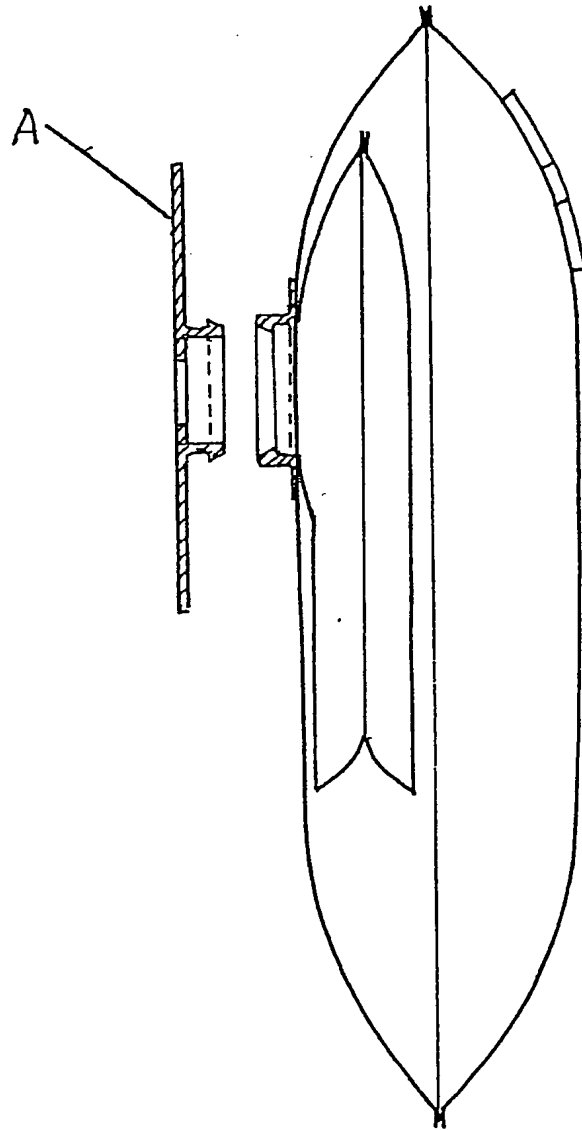


FIG 11

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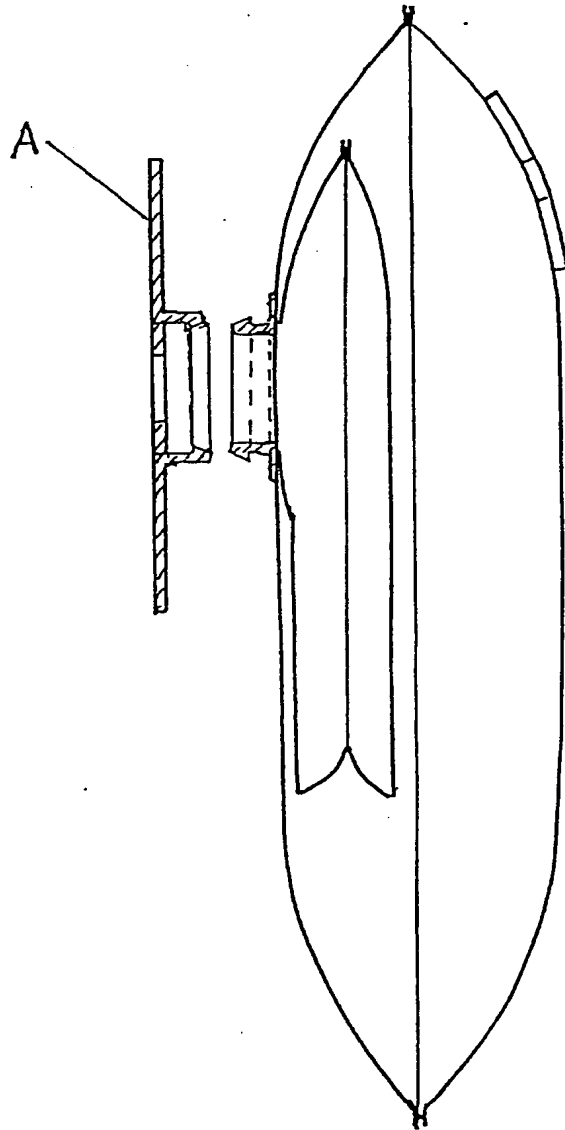
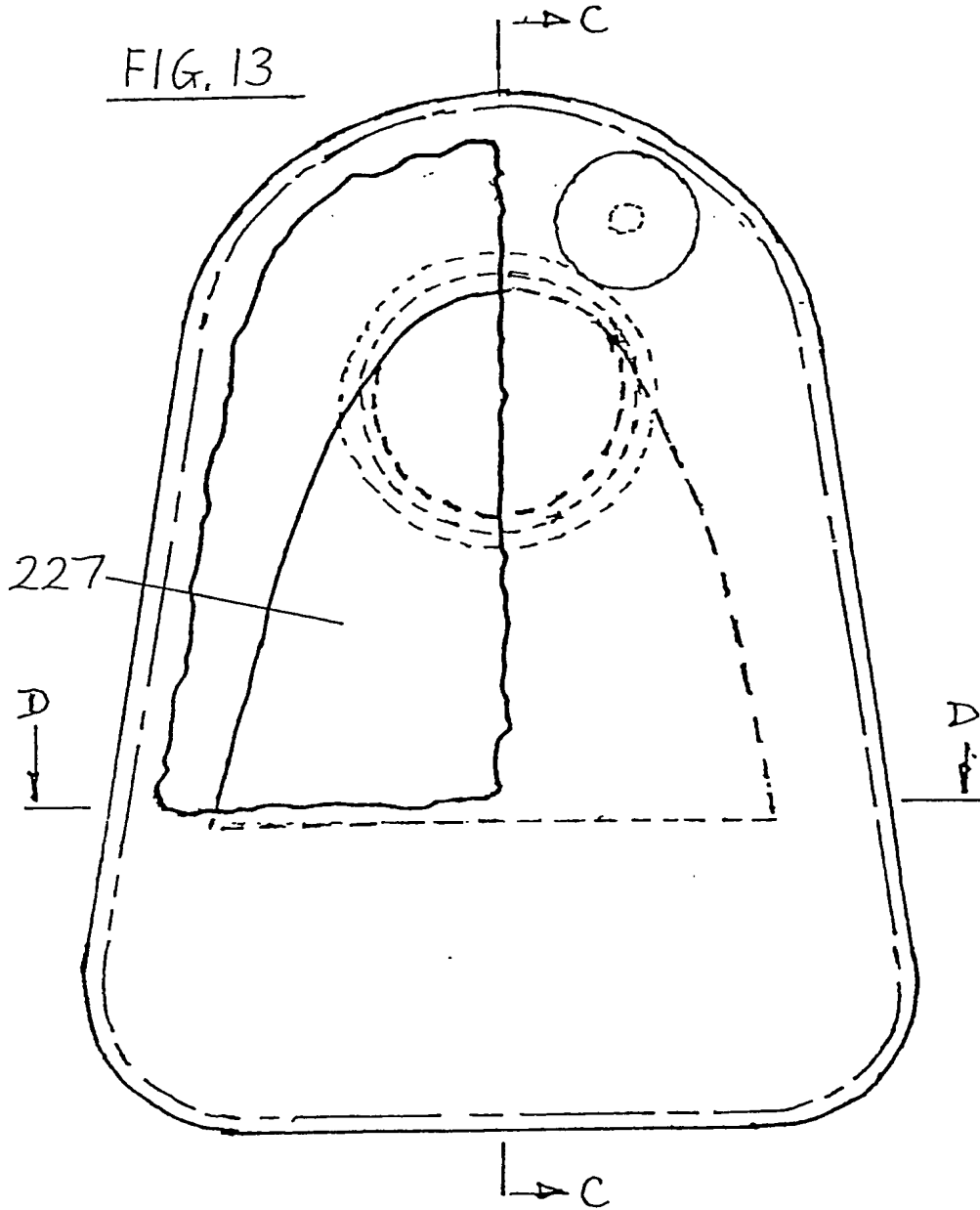


FIG 12

FIG. 13



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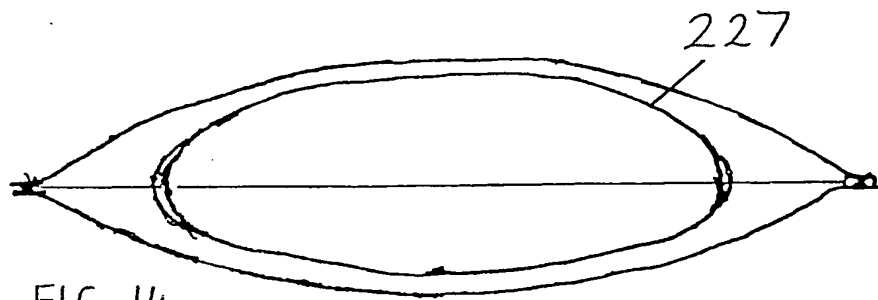


FIG. 14

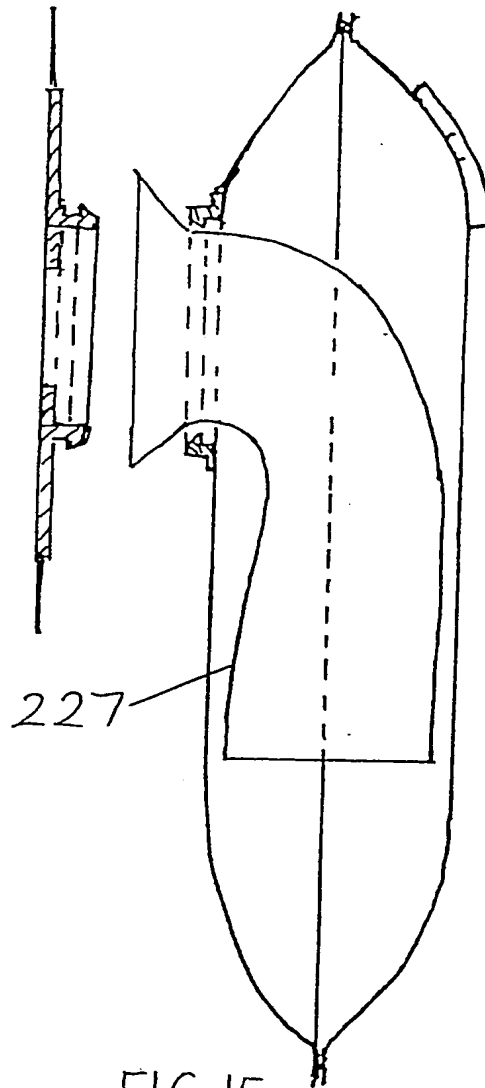


FIG. 15



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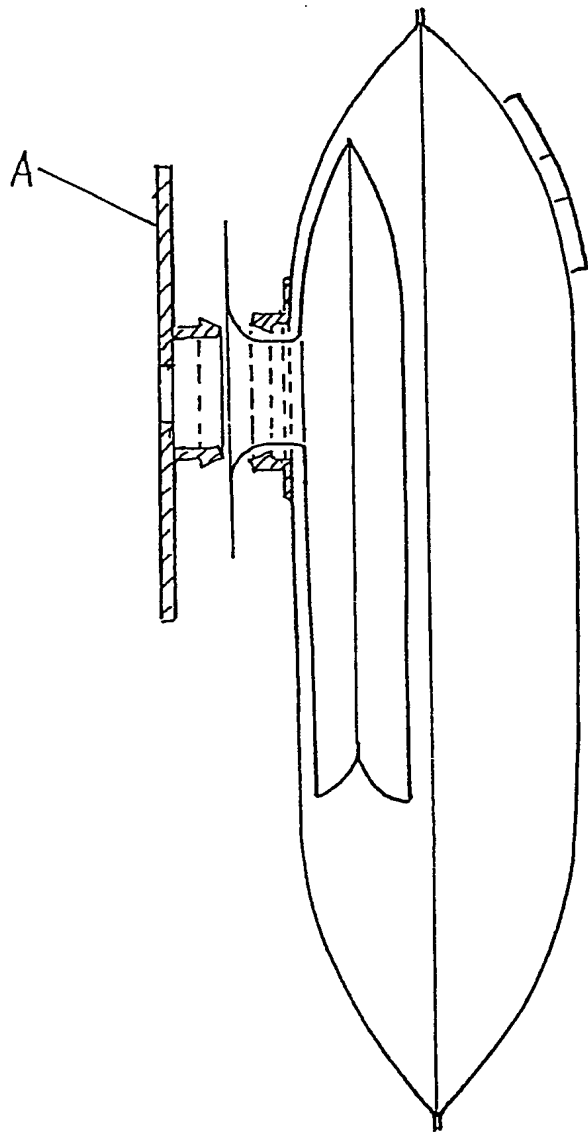


FIG. 16

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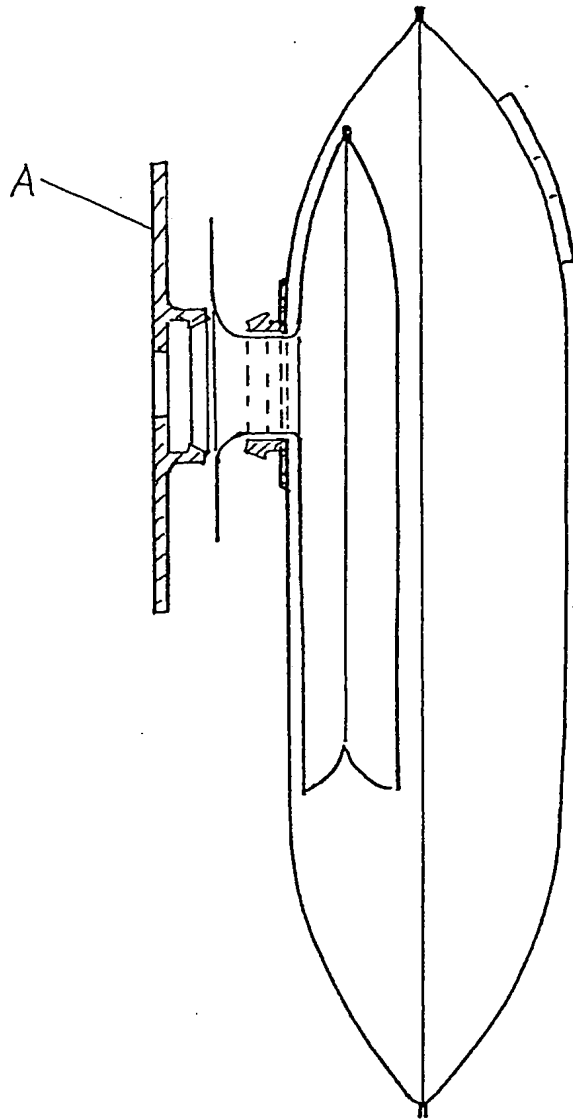


FIG 17

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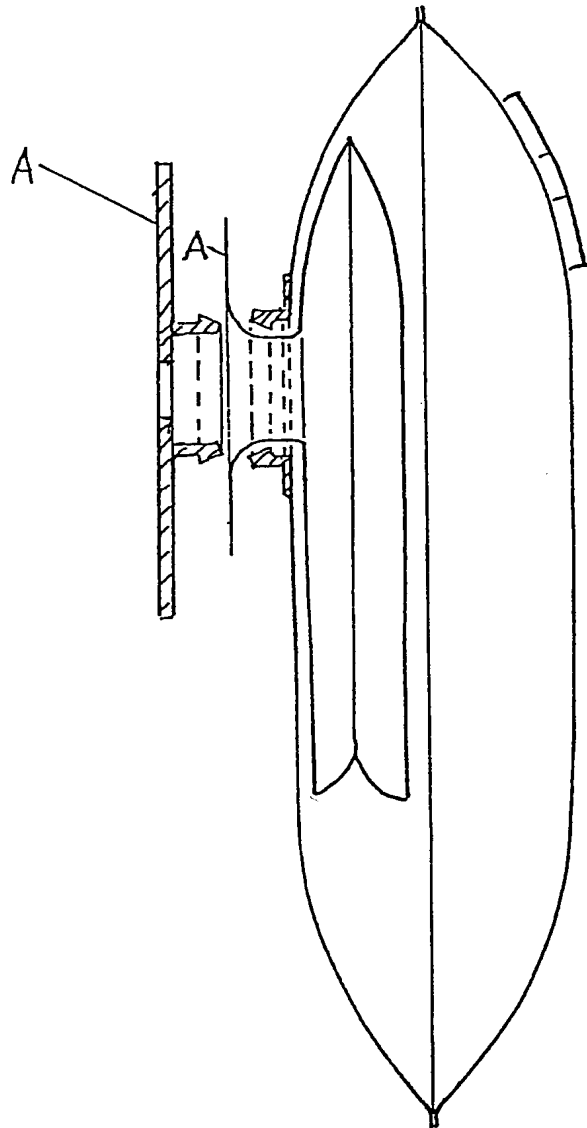


FIG. 18

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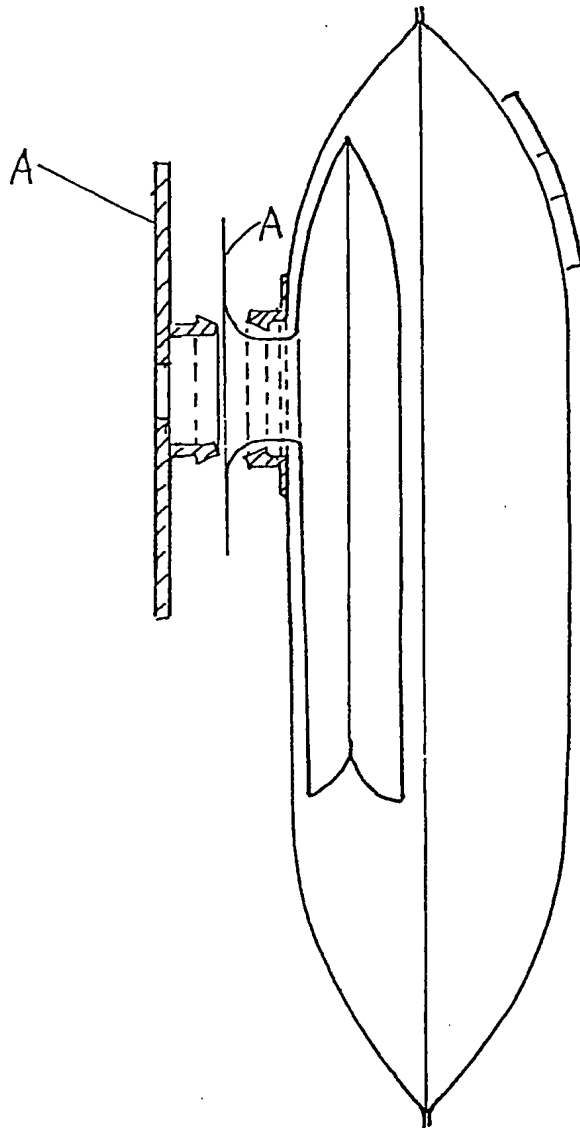


FIG. 19

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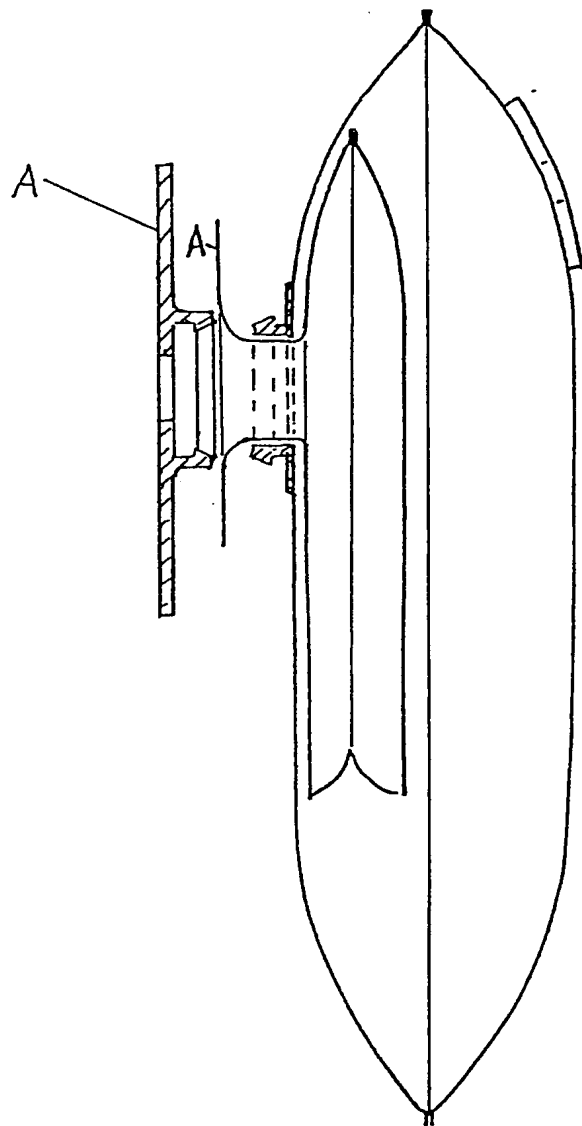


FIG 20

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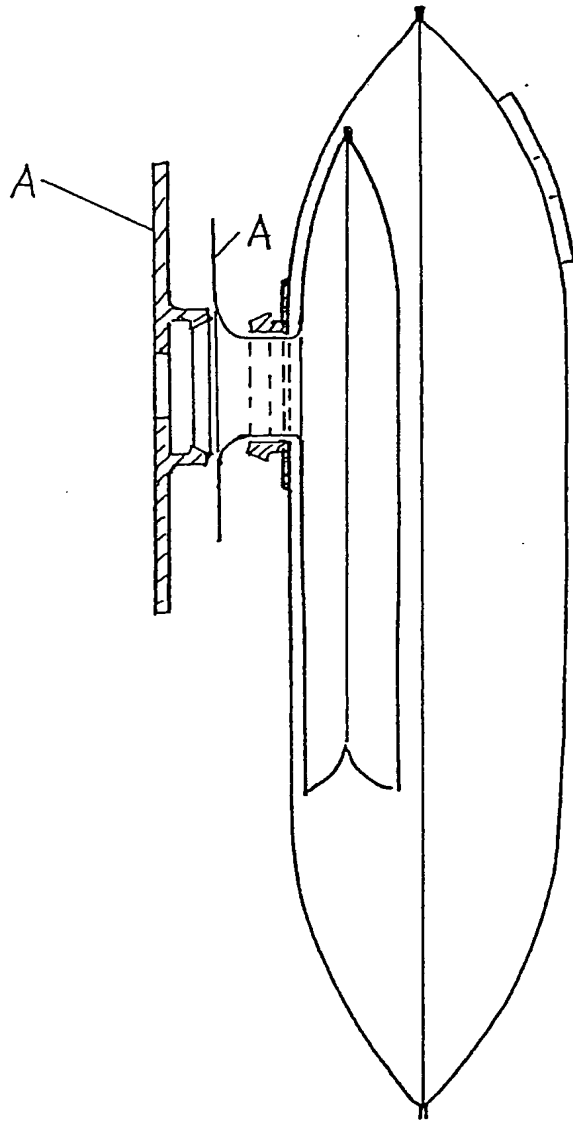


FIG. 21

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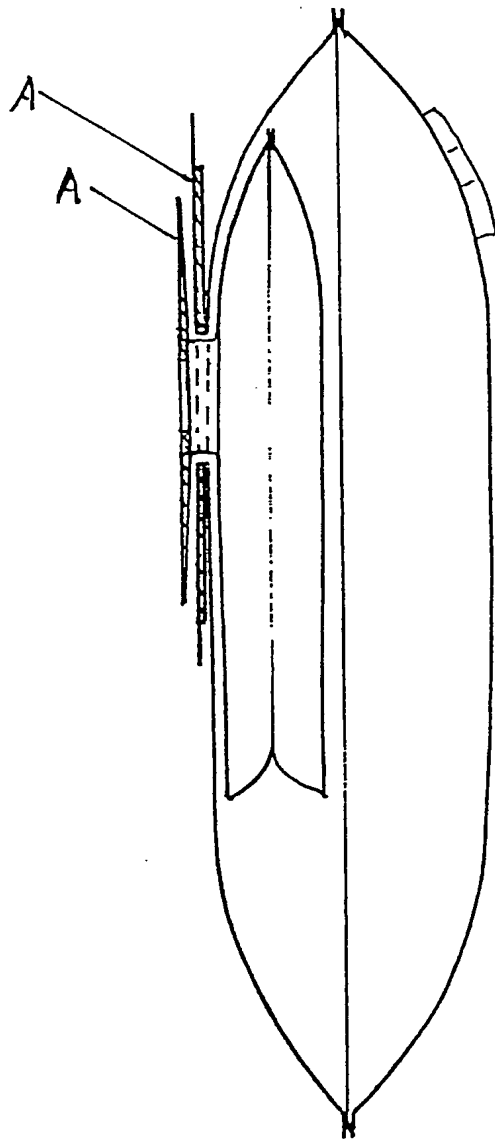


FIG. 22

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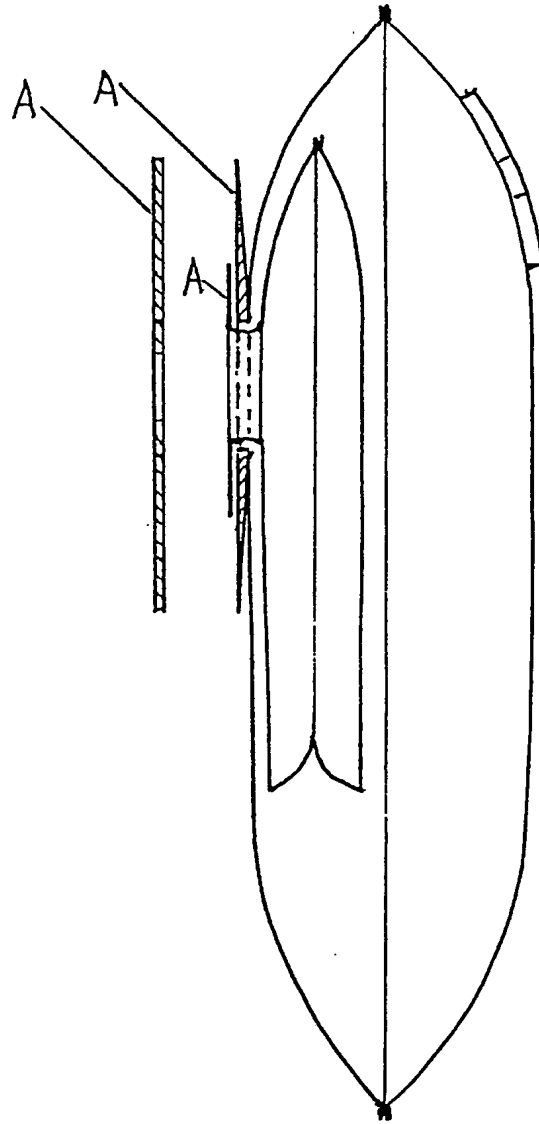


FIG 23



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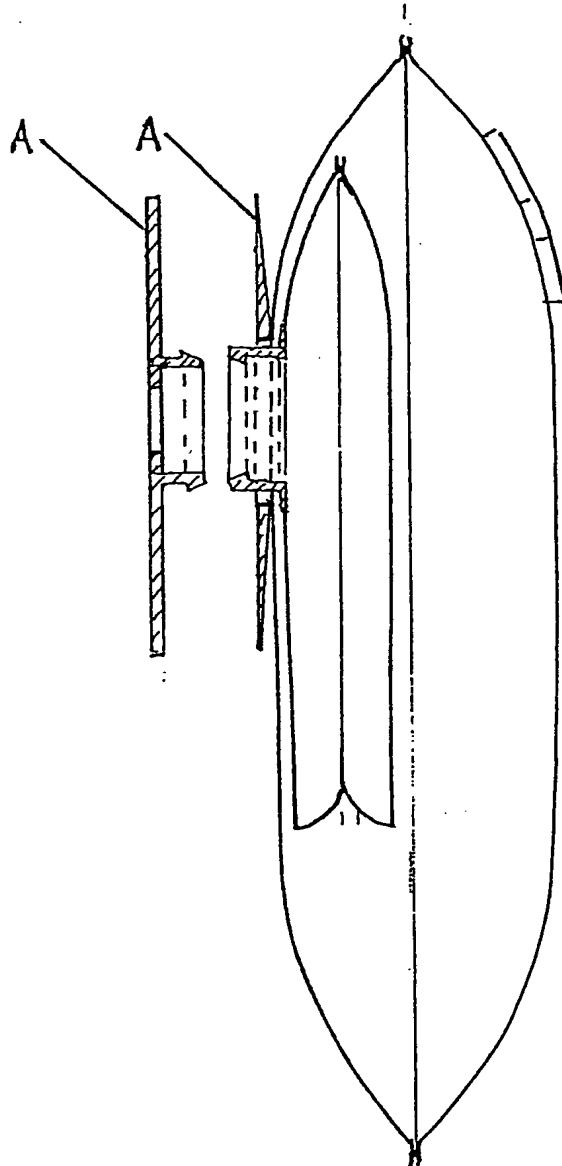


FIG 24

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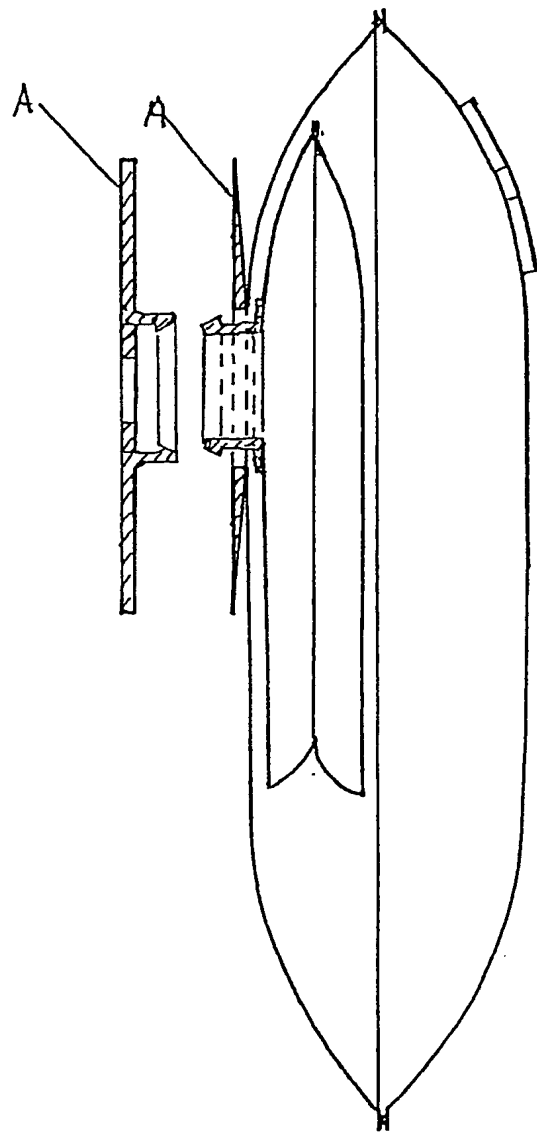


FIG. 25

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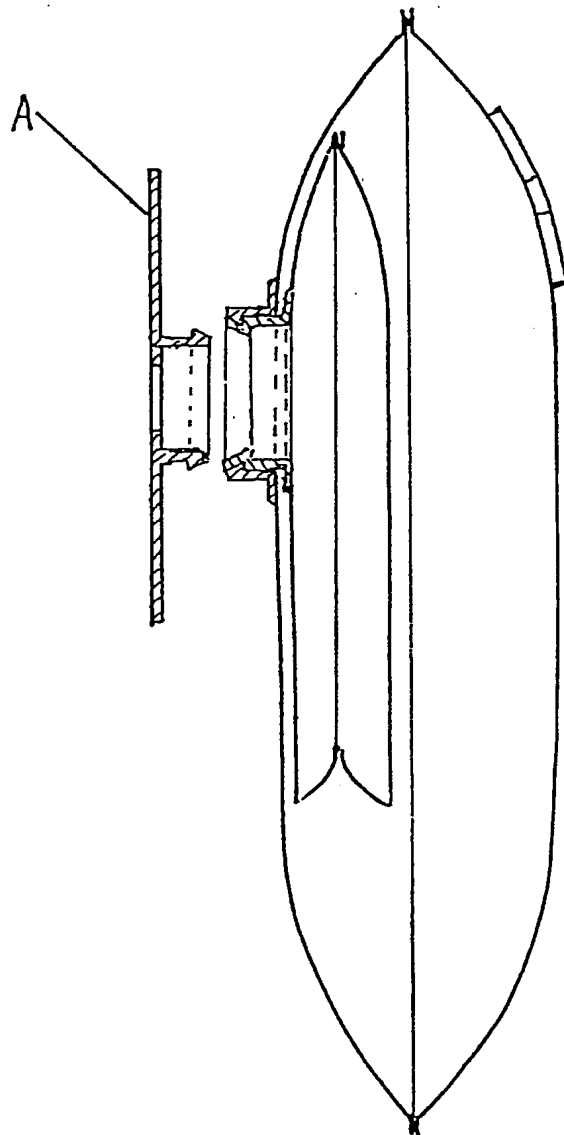


FIG. 26

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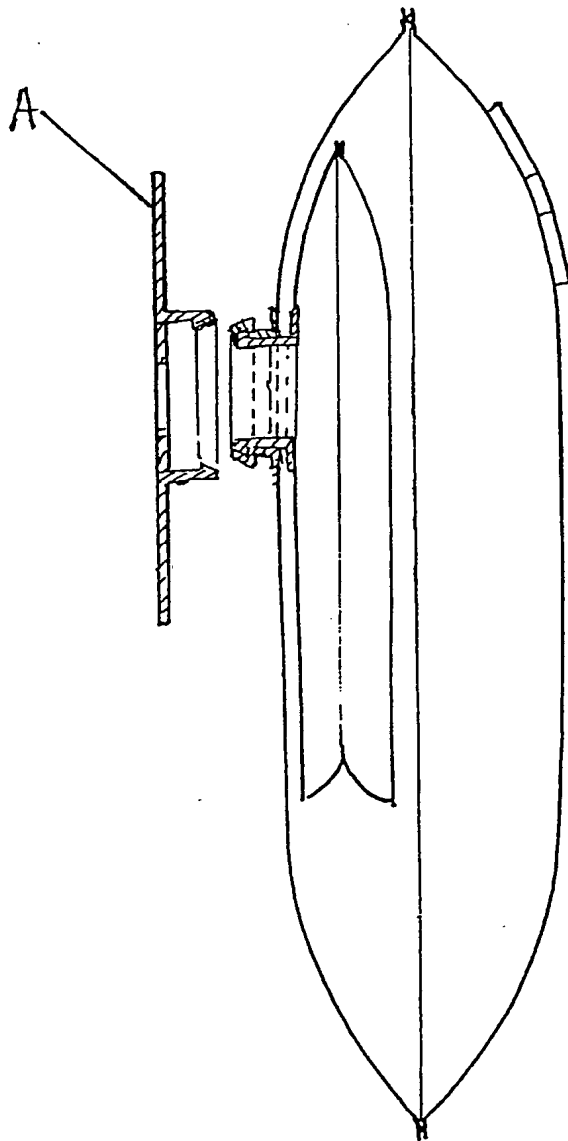


FIG. 27

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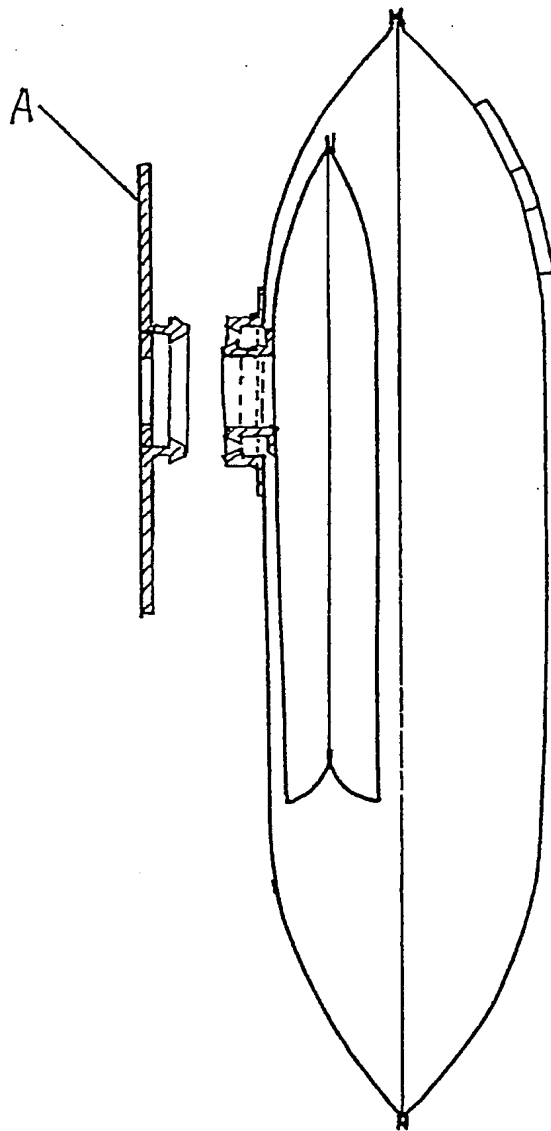


FIG. 28

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Title: "Ostomy bags"

Description of the invention.

This invention relates to ostomy bags (alternatively referred to as ostomy "pouches") such as may be used to collect the body wastes of people (sometimes referred to as ostomates) who have had ostomy operations to bypass their bowel or urinary tracts.

Ostomy operations include, for example, colostomy, ileostomy or urostomy operations, and involve making an artificial, usually permanent, opening (herein referred to as an "ostomy opening") in the body wall, to provide an artificial outlet, via said opening, from the body tract concerned, and ostomates may for example wear such ostomy bags, attached to their bodies over and in communication with said ostomy openings, to collect their body wastes emanating from said openings.

A known ostomy bag, for example, is in the form of a pouch or bag having front and rear walls formed from respective pieces of thin sheet material, typically flexible sheet plastics material, sealed together around their outer edges, so as to give the bag a generally rounded-rectangular shape, arranged such that the longer axis of the rectangle may be at least substantially upright when the wearer is in a standing position.

In this specification the "rear wall" of an ostomy bag is that wall which, in use, lies closest to the wearer.

In an upper region of the rear wall of said known ostomy bag, there is provided an inlet aperture which may for example be surrounded by an annular or generally annular adhesive flange whilst in an upper region of the other, front, wall an outlet aperture having a filter permeable at least to gasses is provided, said filter being either built into said aperture or attached thereto or

thereover. This is known as a one-piece system, in which the bag by way of said adhesive flange is adhered directly to the wearer's body wall, with said inlet aperture over the ostomy opening in the body wall.

Typically the adhesive flange has an adhesive surface which, for protection, is initially provided with a peel off cover sheet which a wearer peels off prior to use. The inlet aperture is preferably small and may be cut to size by the wearer prior to use.

Alternatively a two-part coupling may be employed in which an annular flange provided on the ostomy bag instead of said adhesive flange may be releasably engaged in snap-fitting manner with a complementary flange already adhered to the wearers body wall, around the ostomy opening.

An alternative two-part coupling may be employed in which an adhesive flange provided on the ostomy bag (as in said one-piece system) may be releasably adhered to the outwardly presented surface of a flange already adhered to the wearer's body wall, around the ostomy opening.

In each of said two-part couplings, the advantage of the two-part coupling is that it avoids the need to peel an adhesive flange from the body wall on each occasion when the bag is changed.

Ostomy bags are available in many shapes, types and sizes and some allow external drainage facilities to be connected to them, but all carry out the same basic function of collecting waste material coming from the ostomy opening.

In the use of such known ostomy bags, in theory the solid or liquid waste material from the ostomy opening passes through the inlet aperture and falls to the bottom of the ostomy bag whilst waste gasses from the ostomy opening and/or from said solid or liquid waste material disperse to the environment, through the filter. In

practice this is not always the case, since due to movement of the wearer's body, or clothing, for example when bending, sitting or lying down, the solid or liquid waste material can spread inside the ostomy bag, to block the filter and prevent escape of the waste gasses through the filter, causing the pouch to pressurise with obvious concern to the wearer. It is an object of the invention to reduce the occurrence of blockages to waste gas out-flow from an ostomy bag.

According to a first aspect of the present invention, there is provided an ostomy bag comprising means for dividing at least a portion of the interior of the bag into first and second sections, the first section communicating with an inlet aperture through which body wastes may in use enter the bag, and the second section communicating with an outlet aperture through which waste gasses may in use be dispersed to the environment, said sections of the bag being in communication with each other in a zone remote from the inlet and outlet apertures, and the maximum permitted cross-sectional area of the first section being less than that of the bag as a whole.

Thus, if in use the first section is caused to adopt its maximum permitted cross-sectional area due to the presence of waste, outflow of gasses through the second section will still be permitted, owing to the greater maximum permitted cross-sectional area of the bag as a whole.

Preferably said interior dividing means occupies less than the full width of the bag, and is secured to a rear wall (as herein defined) of the bag.

The interior dividing means may comprise an internal partition wall which occupies less than the full width of the bag and is secured to said rear wall of the bag.



Said internal partition wall may be secured to the rear wall of the bag, other than where said communication is provided, at least generally inwardly of a peripheral region of the bag at which the rear wall of the bag is secured to a front wall of the bag.

Alternatively the interior dividing means may comprise an inner pouch or tube having a width less than the full width of the bag and being secured to said rear wall of the bag.

Preferably said inner pouch or tube has an open bottom to provide said communication between said sections and is secured to the rear wall such that the interior of the pouch or tube is in communication with the inlet aperture, the inner pouch or tube preferably being secured to the rear wall solely in the vicinity of the inlet aperture.

Such an ostomy bag in accordance with the last preceding paragraph may be an otherwise generally conventional ostomy bag having said inner pouch or tube inserted therein, through said inlet aperture.

The pouch or tube, when so inserted, may be secured in position in any of a variety of ways, including for example adhesion and/or snap fitting and/or interposition in any means for attaching the bag to the wearer.

According to a second aspect of the invention, there is provided a dividing means adapted to be inserted through an inlet aperture of a conventional ostomy bag, and adapted to be secured in position, in use, to provide an ostomy bag in accordance with the first aspect of the invention.

Embodiments of the invention will now be described by way of example only with reference to the accompanying drawings, in which:

FIGURE 1 is a front elevational view of a first ostomy bag (or "pouch") in accordance with the invention,

the front wall of the bag being shown partly cut away to the left of the centre line X-X to show an interior dividing means of the bag more clearly;

FIGURE 2 is a cross-sectional side elevational view of the ostomy bag of Figure 1, on the line X-X of Figure 1;

FIGURE 3 is a front elevational view of a second ostomy bag in accordance with the invention, the front wall of the bag being shown partly cut away to the left of the centre line Y-Y to show an interior dividing means of said second ostomy bag more clearly;

FIGURE 4 is a cross-sectional side elevational view of the ostomy bag of Figure 3, on the line Y-Y of Figure 3;

FIGURES 5 to 12 are cross-sectional side elevational views of further embodiments of the invention, in which adhesive surfaces are denoted by the reference 'A';

FIGURE 13 is a front elevational view of a further ostomy bag in accordance with the invention, the front wall of the bag being shown partly cut-away to the left of the centre line C-C to show more clearly an interior dividing means of said further ostomy bag;

FIGURE 14 is a cross-sectional plan view of the ostomy bag of Figure 13, on the line D-D of Figure 13;

FIGURE 15 is a cross-sectional side elevational view of the ostomy bag of Figures 13 and 14, on the line C-C of Figure 13, with parts thereof in a spaced-apart configuration prior to assembly; and

FIGURES 16 to 28 inclusive are cross-sectional side elevational views of a variety of ostomy bags in accordance with the invention, in which adhesive surfaces are denoted by the reference 'A'.

Referring first to Figures 1 and 2 of the drawings, a first ostomy bag 14 in accordance with the invention, suitable for use for example by a person who has had a colostomy or other ostomy operation, comprises front and

rear walls 2 and 3 respectively, formed from respective pieces of thin flexible plastics sheet material sealingly secured together (such as by welding) around their outer peripheral edges, and is illustrated in an upright position. An upper region of the rear wall 3 is provided with an inlet aperture 15 formed therein and surrounded by an adhesive flange 16 fixed to the wall 3 and presenting its adhesive surface rearwards, for application to a wearer's body wall around the wearer's ostomy opening, whilst in an upper region of its front wall 2 there is provided an outlet aperture incorporating (built in or removable and/or interchangeable) an outlet filter 19 permeable to gasses.

The bag 14 is provided with interior dividing means, in this example an internal partition wall 17, in this example being of flexible sheet plastics material or other flexible material, to divide the interior space of the bag into two sections 20 and 21, the sections 20 and 21 in this example being in the form of respective compartments or chambers which are in open communication with each other in the vicinity of the bottom of the bag. The partition wall 17 occupies less than the full width of the bag and is secured to the wall 3, the left, right and upper edges of the wall 17 being sealingly secured without interruption (in this example by welding) to the rear wall 3, inwardly of the outer peripheral region at which the walls 2 and 3 are secured together. Alternatively the wall 17 may be clipped in position, or secured by adhesion. The wall 17 extends down to a location spaced above the bottom of the bag, at and below which location said sections communicate.

When in use, the bag 14 is attached to the wearer's skin around the ostomy opening by the adhesive flange 16 so that the body waste material and gasses from the ostomy

opening can enter, through the inlet aperture 15, into the ostomy bag 14.

The sections 20 and 21 are arranged in such a manner as to direct the waste material into the bottom of the bag 14, where the sections 20 and 21 communicate, and which thus serves as a collection zone for the solid and/or liquid waste, whilst allowing waste gasses, including those originating from the solid and/or liquid waste collected in the bag, to pass upwards through the section 21 and to disperse to the environment through the filter 19.

In this manner, because direct passage of solid and/or liquid waste from the inlet aperture to the outlet aperture is prevented by provision of the wall 17, contamination or obstruction of the filter 19 by solid or liquid waste, is reduced, minimised or prevented; the presence of the wall 17 ensures that any flow from the inlet to the outlet of the bag is via a tortuous path, amenable to gasses rather than to solid/liquid waste. Importantly the section 20 so provided has a maximum permitted cross-sectional area, in a horizontal plane, which is less than that of the bag as a whole, so that even should the section 20 undesirably become occupied and/or blocked by solid/ liquid waste, it will not be able to expand sufficiently to close the section 21, through which gasses may thus continue to pass, to escape to the environment through the filter (19).

In the alternative embodiment of Figures 3 and 4, in which components or parts directly corresponding to those of Figures 1 and 2 are correspondingly designated, instead of the wall 17 of the first embodiment there is provided interior dividing means in the form of a flexible internal pouch or tube 117 with an open bottom 118, the pouch 117 being formed from two less than full width internal dividing walls, said internal dividing walls being sealed together along their left, right and upper edges,

and the rear one of the internal dividing walls having an aperture therein secured (e.g. sealingly secured by welding or adhesion, or clipped) to the rear wall of the bag around, and to provide communication with, the inlet aperture of the bag. The overall effect of the internal pouch or tube 117 is substantially the same as the aforementioned wall 17, namely to divide the interior of the bag into an inlet section 20 and an outlet section 21, communicating in the vicinity of the bottom of the bag, for the same purposes as have hereinbefore been set out in relation to the first embodiment. As in the first embodiment the section 20 so provided has a maximum permitted cross-sectional area, in a horizontal plane, which is less than that of the bag as a whole, so that even should the section 20 undesirably become occupied and/or blocked by solid/ liquid waste, it will not be able to expand sufficiently to close the section 21, through which gasses are thus still permitted to escape.

Said pouch or tube 117 may for example be provided by a lesser-size conventional ostomy bag the bottom of which has been cut off prior to insertion thereof through the aperture 15, and clipping (or other securing) thereof in a permanent or semi-permanent position in a generally upright orientation.

In relation to the invention generally, such adhesive flange 16 is appropriate to providing adhesive coupling arrangements of one-piece type (e.g. Figures 5 and 6) or of two-part adhesive type (e.g. Figures 7 and 8), for attaching the bag to the wearer.

However instead of the adhesive flange 16, a two-part coupling of snap-fitting type may be employed for attaching the bag to a wearer, such as by replacing the adhesive flange 16 with a plastics moulded or other flange which may be releasably engaged in snap-fitting manner with

a complementary flange already adhered to an ostomates body wall, around the ostomates ostomy opening.

Examples of such snap-fitting two-part couplings are illustrated in Figures 9 to 12.

In further relation to the embodiment of Figures 3 and 4, instead of the internal pouch or tube illustrated, or said lesser-size conventional ostomy bag, an internal plastics tube may be utilised (such as of flexible plastics material about 0.05mm thick or so), said plastics tube being adapted to be inserted through the inlet aperture of a conventional ostomy bag, such that at least a majority of the tube and one open end of the tube lie inside the ostomy bag, and the other open end of the tube being adapted to be secured to the rear wall of the ostomy bag (which expression includes being adapted to be secured to a component associated with the rear wall of the bag) solely in the vicinity of the inlet aperture. The tube is preferably of "seamless" form in the sense of not having a longitudinal seam. An example of an ostomy bag in accordance with the invention having such an internal plastics tube is illustrated in Figures 13 to 15 of the drawings, in which example the flexible internal plastics tube 227 concerned is "flared" in the direction towards its lower, outlet, end, to provide an outlet of increased cross-section, while its upper, inlet, end is also flared but so as to afford a neck region which conveniently may be sandwiched in snap-fitting manner between a flange provided on the rear wall of the bag and a complementary flange of an annular member adapted to be adhered to the body wall of the wearer. The tube 227 may initially be parallel-sided, and may be stretched plastically to the shape illustrated in the course of production.

If desired, the inner or outer surface of the tube 227 at its inlet end may be adhesive-coated to facilitate retention.

The above arrangement for securing the tube 227 in position at the inlet aperture may also be adapted to an inner pouch or tube such as that of Figures 3 and 4, either without use of such adhesive coating (Figures 16 and 17) or with use of such adhesive coating (Figures 18 to 21).

The above broad principle of interposing an inlet end of the tube or pouch in the normal means for attaching the bag to the wearer may also be exploited in adhesive (rather than snap-fit) couplings per se. If desired, the inlet end of the tube or pouch may itself be provided with an adhesive coating. Thus, for example, where the ostomy bag is provided with rearwardly presented adhesive means around its inlet aperture, said pouch or tube may have at its inlet end means adapted to be adhered to said adhesive means and preferably to provide further rearwardly presented adhesive means, which further rearwardly presented adhesive means may be adhered to the wearer's body wall around the ostomy opening (Figure 22) or may be releasably adhered to a flange already adhered to the wearer's body wall around the ostomy opening (Figure 23).

Alternatively, again where the ostomy bag is provided with such rearwardly presented adhesive means, said pouch or tube may have at its inlet end means adapted to be engaged with a snap-fit type flange worn by the wearer around the wearer's ostomy opening (Figures 24 and 25) adhesion to the wearer's body flange also being permitted.

In a further alternative arrangement, where the ostomy bag is provided with a rearwardly presented snap-fitting-type flange around said inlet aperture said pouch or tube may have at its inlet end means adapted to be engaged with said flange and/or with the complementary flange worn by the wearer (Figures 26 to 28).

It is to be appreciated that in general terms such pouch or tube may be so inserted and secured by a user, and

so may be sold separately to, or with, conventional ostomy bags as an accessory suitable for use therewith. Alternatively, ostomy bags may be provided, each having a respective such pouch or tube already so inserted and secured. It will be appreciated that in order for such a pouch or tube to operate effectively, in use the lower end of the pouch or tube must be spaced sufficiently above the bottom of the bag, and so in relation to any given bag the pouch or tube to be inserted should not be too large.

In each of the embodiments, although the communication between the first and second sections is in the vicinity of the bottom of the bag, in general terms such communication should be at least a sufficient distance remote from, and preferably a sufficient distance below, the inlet and outlet apertures to provided a tortuous path between the inlet and outlet apertures. With a view to reducing the frequency of bag changes, the zone in which the first and second sections communicate is of sufficient size to accommodate an acceptable quantity of waste without obstructing the second section.

If desired, the difference between said maximum permitted cross-sectional areas may be achieved at least in part by providing in the front wall one or more gusseted portion(s) capable of expansion.

The features disclosed in the foregoing description, or the following claims, or the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for attaining the disclosed result, as appropriate, may, separately or in any combination of such features, be utilised for realising the invention in diverse forms thereof.



## CLAIMS

1. An ostomy bag comprising means for dividing at least a portion of the interior of the bag into first and second sections, the first section communicating with an inlet aperture through which body wastes may in use enter the bag, and the second section communicating with an outlet aperture through which waste gasses may in use be dispersed to the environment, said sections of the bag being in communication with each other in a zone remote from the inlet and outlet apertures, and the maximum permitted cross-sectional area of the first section being less than that of the bag as a whole.
2. An ostomy bag according to Claim 1 wherein said interior dividing means occupies less than the full width of the bag, and is secured to a rear wall (as herein defined) of the bag.
3. An ostomy bag according to Claim 2 wherein said interior dividing means comprises an internal partition wall which occupies less than the full width of the bag and is secured to said rear wall of the bag.
4. An ostomy bag according to Claim 3 wherein the internal partition wall is secured to the rear wall of the bag, other than where said communication is provided, at least generally inwardly of a peripheral region of the bag at which the rear wall of the bag is secured to a front wall of the bag.
5. An ostomy bag according to Claim 2 wherein said interior dividing means comprises an inner pouch or tube

having a width less than the full width of the bag and being secured to said rear wall of the bag.

6. An ostomy bag according to Claim 5 wherein said inner pouch or tube has an open bottom to provide said communication between said sections and is secured to the rear wall such that the interior of the pouch or tube is in communication with the inlet aperture.

7. An ostomy bag according to Claim 6 wherein the inner pouch or tube is secured to the rear wall solely in the vicinity of the inlet aperture.

8. An ostomy bag according to Claim 7 being an otherwise generally conventional ostomy bag but having said inner pouch or tube inserted therein, through said inlet aperture.

9. An ostomy bag according to Claim 8, wherein the pouch or tube, when so inserted, is secured in position by adhesion and/or snap-fitting and/or interposition in means for attaching the bag to the wearer.

10. An ostomy bag substantially as hereinbefore described with reference to and/or as illustrated in the accompanying drawings.

11. A dividing means adapted to be inserted through an inlet aperture of a conventional ostomy bag, and adapted to be secured in position, in use, to provide an ostomy bag in accordance with any one of Claims 1 to 10.

12. A dividing means substantially as hereinbefore described with reference to and/or as illustrated in the accompanying drawings.

13. Any novel feature or novel combination of features described herein and/or illustrated in the accompanying drawings.

**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

-15-

Application number

GB 9207611.6

**Relevant Technical fields**

(i) UK CI (Edition K ) A5R RCE

(ii) Int CI (Edition 5 ) A61F 5/441 5/445

**Databases (see over)**

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI

Search Examiner

MISS E M COLEMAN

Date of Search

25 AUGUST 1992

Documents considered relevant following a search in respect of claims 1-12

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
A	GB 2228416 A (WORSWICK)	

Category	Identity of document and relevant passages	Relevant to claim(s)

#### Categories of documents

**X:** Document indicating lack of novelty or of inventive step.

**Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.

**A:** Document indicating technological background and/or state of the art.

**P:** Document published on or after the declared priority date but before the filing date of the present application.

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